

We claim:

1. A process for manufacturing patterned fabrics comprising the steps of:

5 applying a water soluble chemical substance designed to inhibit wetting to selected regions of a fabric to define treated and untreated regions forming a pattern;

10 exposing the fabric to an aqueous dye liquor until said untreated regions are saturated while said treated regions are less than fully saturated, to thereby form a patterned fabric.

15 2. The process according to Claim 1, wherein said chemical substance comprises a substance selected from the group consisting of alginate print pastes, synthetic print pastes, fluorochemicals and combinations thereof.

3. The process according to Claim 1, wherein said chemical substance comprises a print paste.

20 4. The process according to Claim 3, wherein said chemical substance consists essentially of a print paste.

5. The process according to Claim 1, wherein said chemical substance comprises a fluorocarbon.

25 6. The process according to Claim 1, wherein said chemical substance comprises a fluorocarbon and a print paste.

30 7. The process according to Claim 1, wherein said chemical substance further comprises a dye.

8. The process according to Claim 1, wherein said chemical substance comprises an optical brightener.

9. The process according to Claim 1, wherein said chemical substance comprises a dye and a print paste.

10. The process according to Claim 1, wherein said step of dyeing is performed by a continuous or semi-continuous dye process.

11. The process according to Claim 1, wherein said step of dyeing is performed by a process selected from the group consisting of thermosol dye processes, pad/steam processes, thermosol/pad/steam processes, cold pad batch dyeing, jig dye processes, and combinations thereof.

12. The process according to Claim 11, wherein said step of continuously dyeing is performed using a thermosol dye process.

13. The process according to Claim 11, wherein said step of continuously dyeing is performed using a pad/steam process.

14. The process according to Claim 1, wherein said fabric comprises fibers selected from the group consisting of polyester, cotton, PLA, PTT, nylon, rayon, and blends thereof.

15. The process according to Claim 1, wherein said fabric comprises polyester, and the step of dyeing is performed using a thermosol or pad/steam dye process.

16. The process according to Claim 1, wherein said step of dyeing comprises dyeing the fabric with a dyestuff selected from the group consisting of disperse dyes, reactive dyes, direct dyes, vat dyes, acid dyes, and sulfur dyes.

17. A fabric made according to the process of Claim 1.

18. The process according to Claim 1, wherein said step of applying a chemical substrate is performed by a method selected from the group

consisting of flexographic printing, gravure roll application, roller bed printing, roller screen printing, flick brush, ultrasonic spray, multiple nozzle injection patterning, and print head pattern methods.

5           19.    The process according to Claim 1, wherein said step of applying the chemical substance defines a first pattern, and further comprising the step of applying a second chemical substance in a second pattern which is different from the first pattern, to thereby form a multi-colored fabric.

10           20.    The process according to Claim 19, wherein at least one of said first and second chemical substances comprises a dye.

15           21.    The process according to Claim 1, wherein said fabric comprises at least two types of fibers, and said step of dyeing the fabric comprises dyeing less than all of said at least two types of fibers, to thereby form a heather fabric.

20           22.    A process for manufacturing patterned fabrics from a dye process comprising the steps of:  
               applying a chemical substance to selected regions of a fabric, said chemical substance being adapted to prevent total saturation of underlying fabric regions to which it is applied without requiring a subsequent operation to remove it from the fabric; and  
               dyeing the fabric, to thereby produce a patterned fabric.

25           23.    The process according to Claim 22, wherein said step of dyeing is performed by a continuous or semi-continuous dye process.

30           24.    The process according to Claim 22, wherein said step of dyeing is performed by a process selected from the group consisting of thermosol dye processes, pad/steam processes, thermosol/pad/steam processes, cold pad batch dyeing, jig dye processes, and combinations thereof.

            25.    The process according to Claim 22, wherein said step of dyeing

comprises exposing the entire piece of fabric to at least one dye bath.

26. The process according to Claim 22, wherein said chemical substance comprises a substance selected from the group consisting of alginate print pastes, synthetic print pastes, fluorochemicals, and combinations thereof.

27. The process according to Claim 25, wherein said chemical substance consists essentially of a print paste.

28. The process according to Claim 22, wherein said chemical substance consists essentially of a fluorocarbon.

29. The process according to Claim 22, wherein said chemical substance comprises a fluorocarbon and a print paste.

30. The process according to Claim 22, wherein said chemical substance further comprises a dye.

31. The process according to Claim 22, wherein said fabric comprises fibers selected from the group consisting of polyester, cotton, PLA, PTT, nylon, rayon, and blends thereof.

32. The process according to Claim 22, wherein said step of applying a chemical substrate is performed by a method selected from the group consisting of flexographic printing, gravure roll application, roller bed printing, roller screen printing, foam application, flick brush, ultrasonic spray, multiple nozzle injection patterning, and print head pattern methods.

33. The process according to Claim 22, wherein said step of applying the chemical substance defines a first pattern, and further comprising the step of applying a second chemical substance in a second pattern which is different from the first pattern, to thereby form a multi-colored fabric.

34. The process according to Claim 33, wherein at least one of said first and second chemical substances comprises a dye.

35. The process according to Claim 22, wherein said fabric comprises at least two types of fibers, and said step of dyeing the fabric comprises dyeing less than all of said at least two types of fibers, to thereby form a heather fabric.

36. A fabric made according to the process of Claim 22.

37. A fabric according to Claim 22, wherein the pattern mimics the pattern of the yarns forming the fabric.

38. A process for manufacturing patterned fabrics comprising the steps of:  
applying a water soluble chemical substance designed to inhibit wetting to a fabric to define treated and untreated fabric regions; and  
exposing said fabric to an aqueous dye, such that said treated regions are wet by said aqueous dye to a lesser extent than said untreated regions, thereby forming a pattern of relatively dissimilar colors as a result of their relative differences in uptake of the aqueous dye.

39. The process according to Claim 38, wherein said chemical substance comprises a substance selected from the group consisting of alginate print pastes, synthetic print pastes, fluorochemicals, and combinations thereof.

40. The process according to Claim 38, wherein said step of exposing the fabric to a dye comprises dyeing the fabric by a continuous or semi-continuous dye process.

41. The process according to Claim 38, wherein said water soluble chemical substance includes a dye, to thereby dye the treated fabric regions a different color from the aqueous dye.

42. A fabric made by the process of Claim 38.

43. A patterned textile fabric having a predetermined pattern of color defined by regions of greater and lesser uptake of the same color of equally applied dye, wherein said regions of lesser dye uptake of the finished fabric have substantially the same physical strength as said regions of greater dye uptake.

44. The fabric according to Claim 43, wherein said fabric comprises fibers selected from the group consisting of polyester, cotton, PLA, PTT, nylon, rayon, and blends thereof.

45. The fabric according to Claim 43, wherein transitions between said regions of greater and lesser uptake of the dye are sharply defined.

46. The fabric according to Claim 43, wherein yarns forming the fabric are ring dyed.

47. The fabric according to Claim 43, wherein the predetermined pattern of color simulate the construction of a fabric, to thereby provide the appearance of a yarn-dyed fabric.

48. The fabric according to Claim 43, wherein said fabric is a woven fabric and the predetermined pattern of color comprises stripes extending in at least one of the warp and filling directions of the woven fabric.

49. A process for patterning fabrics comprising the steps of:  
applying in a pattern to a fabric a chemical substance capable of temporarily mechanically inhibiting the wetting of underlying regions of the fabric; and dyeing the fabric by a non-exhaust dye method, to thereby form a patterned fabric.

50. The process according to Claim 49, wherein said chemical substance mechanically inhibits the wetting of the fabric without chemically bonding the dye sites thereof.

5 51. A fabric made according to the process of Claim 49.